



Misophonia, Maladaptive Schemas and Personality Disorders: A Report of Three Cases

Eleonora Natalini¹ · Giancarlo Dimaggio² · Theodoros Varakliotis¹ · Alessandra Fioretti¹ · Alberto Eibenstein^{1,3}

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Abstract

Misophonia is a chronic condition in which specific sounds cause intense negative emotions and autonomic arousal. Misophonia is considered a psychological disorder without any relationship with specific alterations of hearing receptors and independent from physical characteristics of the sound. Moreover if misophonia can be defined as a specific psychiatric disorder or a correlate of other conditions is still under debate. The patients were two women and one man. In this case series we first identified the presence of triggers sounds inducing misophonia as reported during the psychotherapy sessions. At a qualitative level all the three patients perceived that the others were intentionally acting with the purpose of underline their maladaptive interpersonal schemas. All the patients were evaluated with the use of questionnaires. Regarding personality disorders (PD) all three patients suffered from at least one PD. As regard depression, one had moderate depression and one had severe depression. Two patients had moderate/severe anxiety. All the three patients can be considered as highly problematic in the interpersonal domain. Our findings have clinical implications for the treatment of misophonia because it seems to be sustained by underlying PD or maladaptive interpersonal schemas. The qualitative analysis of these cases has highlighted how patients with misophonia tended to ascribe intentionality to the people who emit the sounds that trigger their negative emotional reactions. Further studies are necessary to evaluate which kind of interpersonal patterns occur in these patients.

Keywords Misophonia · Maladaptive schema · Personality disorder · Obsessive–compulsive personality disorder · Anger · Disgust

Introduction

Misophonia is a chronic condition in which the *exposure to* specific sounds increase the arousal and the recurrence of specific intense negative emotions, mostly *anger*. The word “misophonia” (“miso” means hate and “phonia” means sound) was first used by Jastreboff and Jastreboff (2001, 2002) who noted that some individuals had negative reactions to specific sounds. These negative reactions did not show any relationship with the physical characteristics of the

sound as in hyperacusis and the negative emotion, related to the sound exposure, was not fear as in the case of phonophobia. Patients with misophonia did not worry about a physical damage caused by the sound exposure like a hearing loss.

Trigger stimuli are usually represented by repetitive sounds, typically produced by other people (Edelstein et al. 2013; Schröder et al. 2013, 2017; Taylor 2017). Among these sounds the most common are: chewing, sniffing, pen clicking, tapping and lip smacking. Some of these sounds are considered inappropriate in one’s dominant culture (Edelstein et al. 2013). Sometimes trigger sounds are coupled with visual stimuli, for example to see someone putting his hands into his own mouth which is known as *misokinesia* (Schröder et al. 2013). Misophonia sufferers tend to experience strong negative emotions, mostly anger and disgust (Edelstein et al. 2013; Ferreira et al. 2013; Schröder et al. 2013) as a reaction to the trigger sounds. Physical reactions can be associated to the arousal due to sound exposure, e.g. increase of heart rate frequency and muscular tension (Dozier et al. 2017). All these experiences drive the patient

✉ Alberto Eibenstein
eibenstein@libero.it

Eleonora Natalini
eleonora.natalini@gmail.com

¹ Tinnitus Center, European Hospital, Rome, Italy

² Centro di Terapia Metacognitiva Interpersonale, Rome, Italy

³ Department of Applied Clinical and Biotechnological Sciences, University of L’Aquila, L’Aquila, Italy

to avoid the trigger sounds. It is important to note that people with misophonia do not adopt compulsions or rituals in order to prevent the exposure to the sounds, which make the difference from the diagnosis of obsessive compulsive disorder (OCD). Neither they believe nor fear that their reactions are signs of a serious medical illness as it happens in health anxiety. Misophonia sufferers think they can lose control with an over-reaction and they blame themselves for this tendency as they consider them morally unacceptable (Schröder et al. 2013). Their strain to avoid trigger sounds and the limited interaction with other people results in social dysfunctions (Schröder et al. 2013; Dozier et al. 2017). It seems that misophonia is already present during development in childhood and early teenage years (Schröder et al. 2013; Kumar et al. 2017; McGuire et al. 2015; Rouw and Erfanian 2017) with symptoms that worsen over time (Kluckow et al. 2014; Rouw and Erfanian 2017). Although systematic data upon its prevalence are not yet available, preliminary observations suggest that misophonia is relatively common (Jastreboff and Jastreboff 2014; Wu et al. 2014). The current trend is to consider misophonia as a psychological, more than a pure neurophysiological disorder (Jastreboff and Jastreboff 2002, 2014; Kumar et al. 2017) and the debate focuses on being a specific psychiatric diagnosis (Edelstein et al. 2013; Schröder et al. 2013) or a correlate of other conditions (Ferreira et al. 2013; Kluckow et al. 2014; Webber et al. 2014; Wu et al. 2014; Reid et al. 2016).

The role of Personality Disorders and Maladaptive Schemas

As noted above, some authors have observed that the physical and emotional reactions of people with misophonia are not related to the physical characteristics of the sound itself. Trigger sounds are context-specific (Edelstein et al. 2013) and misophonia sufferers think that people who produce the trigger sound do it intentionally (Reid et al. 2016). Some patients report that misophonia is only activated by specific individuals, e.g. relatives or close friends, while it is not present if the same sound is produced by themselves or by animals or children (Edelstein et al. 2013). Misophonia sufferers think that other people do not pay attention to them and do not give value to their needs (Bernstein et al. 2013) thus reporting feelings of offence or violation (Edelstein et al. 2013).

All these attributions are typical of persons with PD, who think that other people try to subjugate, criticize, dominate, exploit, deceive, disregard and humiliate them (American Psychiatric Association 2013). These patients typically endorse a representation of self as mistreated, constricted, harmed, damaged, humiliated, impotent, inadequate or fragile. These are the core elements of the so-called maladaptive schemas for self and others (Benjamin 1996; Dimaggio et al.

2015; Young et al. 2003) which are at the roots of the interpersonal dysfunction and of many symptom reactions in PD.

In particular, these aspects are characteristics not only of Borderline PD but also of the over-controlled inhibited fearful type, which is recently arousing much interest (Dimaggio and Overholser 2018; Fassbinder and Arntz 2018; Gordon-King et al. 2018; Popolo et al. 2018; Simonsen et al. 2018). It is important to underline that most of the literature available on misophonia (Bernstein et al. 2013; Dozier 2015a, b; Jastreboff and Jastreboff 2014; McGuire et al. 2015; Schröder et al. 2017) do not evidence neither the presence of PD nor maladaptive interpersonal schemas. As regard the co-occurrence of PD and misophonia, Schröder et al. (2013) reported that 52.4% of their sample had OCPD and no other PD. Therefore the presence of PD and related schemas in misophonia are largely underestimated.

Aims and Hypothesis

The goal of our study was to preliminarily investigate the presence of PD and maladaptive interpersonal schemas in patients with misophonia. We hypothesized that (a) any kind of PD could be present, above and beyond OCPD and that (b) maladaptive interpersonal schemas would be clinically significant.

Methods

Participants

Patients referred to the Tinnitus Center in Rome, a private clinic with a specialized department for the diagnosis and the treatment of hearing disorders, between February 2016 and June 2017. Written informed consent was obtained from each participant both for the study and for the future publications. All procedures performed in the study involving human participants were in accordance with the ethical standard of the local ethics committee. Inclusion criteria were: presence of at least moderate scores (10–14) on the Amsterdam Misophonia Scale (A-MISO-S; Schröder et al. 2013). Exclusion criteria were: mental impairment or evidence of organic brain disorders, psychotic disorder or bipolar I disorder, drug and alcohol abuse. As regard to hearing disorders, patients with hyperacusis, hearing loss and tinnitus were excluded. Normal hearing was defined with a hearing threshold < 25 dB HL in all tested frequencies in both ears at the audiometric evaluation. Hyperacusis was assessed with the loudness discomfort levels (LDLs). The tested frequencies were 0.25, 0.5, 1, 2, 4 and 8 kHz. (Goldstein and Shulman 1996). All participants had normal hearing and normal LDLs. None of them had a

psychiatric medication. Participants were 2 women (age 25 and 41) and 1 man (age 46) all Caucasian. The study was conducted by a psychotherapist and a medical doctor. The therapist was a licensed Cognitive Behavioral Therapist (CBT) with 5 years of clinical experience in hearing disorders. Assessment of hearing problems was performed by an Ear Nose and Throat (ENT) specialist and audiologist.

Instruments

Amsterdam Misophonia Scale (A-MISO-S; Schröder et al. 2013) is a semi-structured interview which is not validated. On 6-item scale (range 0–24) patients were asked about the (1) time they spend on misophonia, (2) interference with social functioning, (3) level of anger, (4) resistance against the impulse, (5) control they had over their thoughts and anger, and (6) time they spend avoiding misophonic situations. Scores from 0 to 4 are considered subclinical misophonic symptoms, 5–9 mild, 10–14 moderate, 15–19 severe and 20–24 extreme.

Structured clinical interview for DSM-IV personality disorders (SCID-II; First et al. 1997). The SCID-II is a structured clinical interview that assesses the full range of PD traits found in DSM IV PD. The interview was administered by the treating clinician before the beginning of any physical or psychological treatment.

Young schema questionnaire (YSQ-L3; Young and Brown 2003) is a 232-item self-report questionnaire designed to assess 18 early maladaptive schemas (EMSs) grouped into five domains. Items are rated on a 6-point Likert scale with higher scores indicating greater presence of the EMS for the respondent. Scores for each schema are found by counting the total number of items within each schema rated either 4, 5 or 6. Patients with PD, especially in the most severe forms, endorse many maladaptive schemas, while patients with higher functioning and no PD have no more than 1 or 2 heightened schemas.

Beck depression inventory-II (BDI-II; Beck et al. 1996). The BDI-II is a 21-item measure assessing depression over the previous 2 weeks. Higher scores suggest a high level of depression. The cutoff used are the following: 0–13 corresponded to minimal depression, 14–19 to mild depression, 20–28 to moderate depression and 29–63 to severe depression.

State-trait anxiety inventory (form-Y) (Spielberger et al. 1983). The STAI-Y is a self-report instrument measuring state-anxiety (anxiety about an event) and trait-anxiety (anxiety level as a stable characteristic). All items were rated on a 4-point Likert Scores range from 20 to 80. Higher scores have a correlation with a higher level of anxiety.

Case Descriptions

Roberto, 46 years old is a manager and has a stable romantic relationship. He comes from a patriarchal family where it was difficult for the patient to express his own ideas “children must bring respect to adults”. The patient complains that he is not considered by other people and recognizes a tendency to avoid conflicts and fulfil others’ wishes due to the fear of being abandoned.

He asks for help because he does not tolerate the sounds and the sight of people who chew with open mouth and/or with voracity (crunching sounds and chewing), eat nails, snore and pen-clicking. When exposed to these sounds he feels to suffer a “physical violence” and a “torture”. He becomes angry at the idea that someone is hurting him and does not respect him. He is disgusted to attend at something that is unacceptable for him. The worst thing he fears is an exaggerated aggressive reaction when the trigger stimuli are present. Regarding the trigger sounds he believes he does not have the right to complain because he realizes that he is the only one annoyed and other people can judge him crazy or strange. To manage the negative emotions or to prevent their onset he brings some wax-earplugs and avoids to look at the person who makes the sound. When thoughts of aggressive reactions are present he moves away or makes a sound by snapping the fingers. Misophonia started in late childhood and was associated to the sounds made by his father. Misophonia has a major impact on his life. A typical story related to misophonia is structured like this: “I was at the table with my sister who starts eating bread before the meal with a lot of voracity. I feel the anger rising in me and I do not want to see that scene. I think that it is not polite to eat that way. Moreover she is getting fat and therefore she should not gorge on bread”.

Two episodes are significant: in the first one the patient was sitting in a bar and heard a crunching sound that caused a reaction of anger. When he realized it was a pigeon and that the sound was not intentionally produced by a human being, the annoyance suddenly disappeared. In the second episode he was exposed to the snoring of his partner and this usually irritates him, but no misophonia was experienced that time. He explained that day he felt guilty with his partner for something that he did and he realized that this awareness made him tolerate the snoring.

Elena 41 years old, is a professor, she is married and has two children. She describes her mother as anxious and her father as caring, although she does not report any episode with him. In situations of conflict her father was on her mother side. Her older brother used to lecture and belittle her. She feels inadequate although she is a perfectionist. She tries to avoid conflicts because she thinks

she is unable to impose her own ideas with the fear of being misunderstood. Misophonia started during her adolescence in the family environment and now it is activated also with her husband and with a work colleague. She came to therapy mainly to prevent the onset of misophonia with her children. The trigger sounds are: swallowing, chewing, eating nails, sneezing. This last sound is the only sound that causes misophonia even if emitted by people different than those reported. She is worried by her possible aggressive reactions if exposed to misophonic sounds, losing control and experiencing strong physical discomfort (stiffness, shortness of breath and agitation). She goes away when exposed to these sounds trying to avoid them and if not possible she eats, even if not hungry, to mask the misophonic sound. She often talks to herself to let her anger come out. The patient does not suffer of misophonia with children and animals but is very concerned about the possible occurrence when the children will grow up. A typical situation may be: “I hear my husband’s sneeze, I feel angry as if I had been spiteful, I feel hatred and disgust. I think he is a useless person, that he should suffer too, I wish he would disappear “. The emotional reactions linked to the sounds are of anger and disgust. Elena reports an important observation: she noted that when misophonia is caused by her husband, all symptoms suddenly disappear if he shows affection and embraces her. Moreover, if she believes that the sound is legitimate, misophonia does not arise: for example, this happens if her mother produces sounds while drinking to take a drug.

Giorgia is 25 years old, she does not have a relationship and she is a university student. She comes from a patriarchal family. She had a good relationship with her mother while in conflict with her father because he did not understand her. She did not have a very good emotional connection to her brother. At school she felt teased and judged. Giorgia often complains about being “different” in a certain way and sometimes she has the perception to be “crazy or strange”, these feelings getting worse with misophonia with the final belief to be inadequate and helpless. Anger is often present but suppressed because “I do not know how to react”. She asks for treatment because the misophonia, which started

during adolescence, became more and more serious. The barking of dogs was a trigger sound too so she could no longer relax.

The trigger sounds are: chewing, barking of dogs, tooth cleaning with a toothpick and kisses. The patient fears that if exposed to the trigger sound she can offend the one who emits the sound, throw or break objects, scratch or tear the hair. She tries to avoid critical situations by moving away when possible. She also wear the headphones when neighbours’ dogs are barking and she thinks: “they should not live with a dog in a small apartment and leave it on a balcony to annoy other people they are really ignorant and rude with animals”. Sometimes misophonia is related to the sound of chewing and Giorgia reports these thoughts: “when I hear my father’s chewing I go away thinking about how strange I am and this will be a cause of suffering for my parents” and “I’m strange, nobody wants me and I will not give nephews to my parents”. The emotions connected to these sounds are mainly anger and disgust, the latter as a specific reaction to sound of chewing.

Results

All three participants reported misophonic symptoms in the severe range (Tab. 1). As regards PD, all three patients suffered from at least 1 PD. All three of them had OCPD. Roberto had co-occurrent Borderline PD (BPD) and Giorgia had co-occurrent avoidant PD (APD), paranoid (PPD) and depressive PD with passive-aggressive traits. As regard symptoms, Roberto had moderate depression and Giorgia had severe depression. Finally, two patients had moderate/severe anxiety (Table 1). For what concerns schemas, all three patients can be considered as problematic in the interpersonal domains. Giorgia endorsed maladaptive schemas in all domains. We found the same schemas in Roberto except for the “vulnerability to harm or illness”; particularly he felt deprived, abandoned, self-sacrificial and approval seeking. He had no self-control and was a perfectionist. Elena who suffered from OCPD only, was mostly perfectionist.

Table 1 Results for *Amsterdam misophonia scale (A-MISO-S)*, *structured clinical interview for DSM-IV personality disorders (SCID II)*, *beck depression inventory-II (BDI-II)* and *state-trait anxiety inventory (STAI-Y)*

	A-MISO-S	SCID II Diagnosis	SCID II Total criteria	BDI-II	STAI-Y State-anxiety Trait-anxiety
Giorgia	15	APD OCPD PPD	43	31	53 61
Elena	16	OCPD	13	6	35 44
Roberto	15	OCPD BPD	30	24	56 52

The emerging pattern is that of people with widespread difficulties in making positive sense of interpersonal relationships. The schema named unrelenting standards/hypercriticalness, a sign of perfectionism, was heightened in all three patients, which is consistent with OCPD diagnosis. Schemas of enmeshment, subjugation, self-sacrifice, approval-seeking and punitiveness were, in different degrees, endorsed by all three patients.

Discussion

People with misophonia tend to experience negative reactions, e.g. hyperarousal and intense negative emotions in response to trigger sounds they think someone is intentionally producing. We hypothesized that misophonia may be strongly related to maladaptive interpersonal schemas and to PD above and beyond the presence of OCPD (Schröder et al. 2013). We performed an intensive quantitative analysis assessing PD and schemas with specific instruments and we investigated the qualitative levels (e.g. patients' narratives). Results were consistent with predictions. All three patients with misophonia had at least one PD, particularly OCPD as reported in literature. OCPD is in fact the most common co-occurrent PD within this condition (Schröder et al. 2013). The idea is that PD, together with over-controlled and inhibited features (Dimaggio and Overholser 2018) can be associated with disabling symptoms. Other PD were found such as BPD, PPD and APD. Two in three patients had at least an association of two different PD. This calls for further investigations in order to explore whether misophonia is mostly related to OCPD or also with other PD and which is the relationship with PD severity. As regards interpersonal problems, we found that maladaptive interpersonal schemas were heightened virtually in all domains. Perfectionism was over-represented in all three cases, consistent with the trans-diagnostic aspects of PD (Dimaggio et al. 2018). Moreover, the presence of schemas related to unrelenting standards and criticism suggests that these individuals are prone to over-control themselves and the human–environment. Social interactions are based on rigid rules and specific moral behaviour. When other people do not adhere to their norms the reaction is anger and disgust and this happens with sounds that, in their opinion, should not be generated. In their personal narratives all three patients reported that trigger sounds elicited negative emotions and behavioral reactions on the base of specific cognitive interpretations about the source of those sounds. They experienced distress when they thought that the sounds were produced intentionally, failure to comply with their personal individual needs. They also tended to consider that other people were adopting a dominant position they cannot accept. On the contrary, if trigger sounds come from people they hurt or who took care

of them, negative emotions and hyperarousal disappeared. Moreover, if the source of the sound did not show any relationship with human beings, initial arousal soon vanished.

Specifically, these processes are quite consistent with OCPD. These patients tend to report hostile-dominant interpersonal problems and high interpersonal distress (Gordon-King et al. 2018). They are vindictive and cold in their interpersonal relationships (Cain et al. 2015). Their need for interpersonal control (Dimaggio et al. 2015; Lynch and Cheavens 2008) can lead to hostility and occasional explosive outbursts of anger (Villemarette-Pittman et al. 2004). All the participants in our study perceive themselves as injured and/or felt disgusted from the behavior of others which they considered as unfair (Dimaggio et al. 2017; Villemarette-Pittman et al. 2004).

Conclusions

Our study has limitations, the first one is represented by the small sample size. The study must be extended to a larger sample. Other variables we did not include in our assessment can be associated to misophonia, such as history of trauma, disturbed attachment and emotional dysregulation.

With replication, our findings have clinical implications. These patients would benefit of a therapy that will put together the available techniques currently used for misophonia (Bernstein et al. 2013; Dozier 2015a, b; Jastreboff and Jastreboff 2014; McGuire et al. 2015; Schröder et al. 2017) with interventions on the underlying maladaptive interpersonal patterns and PD related problems associated with misophonia.

Compliance with Ethical Standards

Conflict of interest All authors declare that they have no conflict of interest.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standard of the local ethics committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from the individual participant included in the study.

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